

COMPOSITIONS AND METHODS FOR DETERMINING
ANTI-VIRAL DRUG SUSCEPTIBILITY AND RESISTANCE
AND ANTI-VIRAL DRUG SCREENING

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ABSTRACT

10 This invention provides a method for determining
susceptibility for an HCV or HCMV anti-viral drug
comprising: (a) introducing a resistance test vector
comprising a patient-derived segment and an indicator gene
15 into a host cell; (b) culturing the host cell from (a); (c)
measuring expression of the indicator gene in a target host
cell; and (d) comparing the expression of the indicator gene
from (c) with the expression of the indicator gene measured
when steps (a)-(c) are carried out in the absence of the
20 anti-viral drug, wherein a test concentration of the anti-
viral drug is present at steps (a)-(c); at steps (b)-(c); or
at step (c). This invention also provides a method for
determining HCV or HCMV anti-viral drug resistance in a
patient comprising: (a) determining anti-viral drug
25 susceptibility in the patient at a first time using the
susceptibility test described above, wherein the patient-
derived segment is obtained from the patient at about said
time; (b) determining anti-viral drug susceptibility of the
same patient at a later time; and (c) comparing the anti-
30 viral drug susceptibilities determined in step (a) and (b),
wherein a decrease in anti-viral drug susceptibility at the
later time compared to the first time indicates development
or progression of anti-viral drug resistance in the patient.
This invention also provides a method for evaluating the
biological effectiveness of a candidate HCV or HCMV anti-
viral drug compound. Compositions including resistance test
vectors comprising a patient-derived segment comprising a
HCV or HCMV gene and an indicator gene and host cells
transformed with the resistance test vectors are provided.

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